

# FIRE PREVENTION STANDARDS

Subject: Standby Generators

Number: 435.204

Date: Revised 11/19/01

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## OBJECTIVE

To provide for the expeditious review of plans submitted for installation of standby generator sets and their integral fuel tanks.

## PROCEDURE

- A. Gen-sets shall be installed in accordance with Articles 700, 701, and 702 of the California Electrical Code.
  - B. Gen-sets location shall be reviewed with concern in relation to building openings, exits, and fire equipment access lanes. 7902.3.3.1 UFC
  - C. Gen-sets shall be U.L. listed assemblies or assemblies of listed components.
  - D. **7902.1.14.2 Tanks at grade.** Tanks shall rest on the ground or on foundations made of concrete, masonry, piling or steel. Tank foundations shall be designed to minimize the possibility of uneven settling of the tank and to minimize corrosion in any part of the tank resting on the foundation.
  - E. **7902.1.11.4 Vent pipe outlets.** Vent pipe outlets for tanks storing Class I, II, or III-A liquids shall be located such that the vapors are released at a safe point outside of buildings and not less than 12 feet (3658 mm) above the adjacent ground level. Vapors shall be discharged upward or horizontally away from closely adjacent walls to assist in vapor dispersion. Vent outlets shall be located such that flammable vapors will not be trapped by eaves or other obstructions and shall be at least 5 feet (1524 mm) from building openings or property lines of properties that can be built on.
  - F. **7902.2.7.2 Fill pipe openings.** For top-loaded tanks, metallic fill pipes shall be designed and installed to minimize the generation of static electricity by terminating the pipe within 6 inches (152.4 mm) of the bottom of the tank and shall be installed to avoid excessive vibration. For Class I-B and I-C liquids, other than crude oils and asphalts, fill pipes shall be designed and installed in a manner which minimizes the possibility of generating static electricity. Filling and withdrawal connections for Class I, II and III-A liquids which are made and broken shall be located outside of buildings at a location away from sources of ignition and not less than 5 feet (1524 mm) away from building openings. Such connections for any liquid shall be closed, liquid tight when not in use and properly identified.
  - G. **7902.2.8 Drainage control and diking.**
    - 1. **7902.2.8.1 General.** The area surrounding a tank or group of tanks shall be provided with drainage control or shall be diked to prevent accidental discharge of liquid from endangering adjacent tanks, adjoining property or reaching waterways.
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## EXCEPTIONS:

1. The chief is authorized to alter or waive these requirements based on a technical report in accordance with Section 103.1.1 which demonstrates that such tank or group of tanks does not constitute a hazard to other tanks, waterways or adjoining property, after consideration of special features such as topographical conditions, nature of occupancy and proximity to buildings on the same or adjacent property, capacity and construction of proposed tanks and character of liquids to be stored, and nature and quantity of private and public fire protection provided.

2. **Drainage control and diking is not required for listed tanks constructed with an integral method of secondary containment.**

### H. 7902.3 Container and Portable Tank Storage Outside of Buildings.

1. **7902.3.3.2 Storage adjacent to buildings.** A maximum of 1,100 gallons (4163.5 L) of liquids stored in closed containers and portable tanks is allowed adjacent to a building located on the same premises and under the same management, provided that:

- a. The building does not exceed one story in height. Such building shall be of fire-resistive construction with noncombustible exterior surfaces or noncombustible construction and shall be devoted principally to the storage of liquids, or
- b. The exterior building wall adjacent to the storage area shall have a fire-resistance rating of not less than two hours, having no openings to above grade areas within 10 feet (3048 mm) horizontally of such storage and no openings to below grade areas within 50 feet (15 240 mm) horizontally of such storage.

The quantity of liquids stored adjacent to a building protected in accordance with Item 2 is allowed to exceed 1,100 gallons (4163.5 L), provided that the maximum quantity per pile does not exceed 1,100 gallons (4163.5 L) and each pile is separated by a 10-foot- minimum (3048 mm) clear space along the common wall.

Where the quantity stored exceeds 1,100 gallons (4163.5 L) adjacent to a building complying with Item a, or the provisions of Item a cannot be met, a minimum distance in accordance with the column for distance to property line that can be built on in Table 7902.3-A shall be maintained between buildings and the nearest container or portable tank.

- I. **7902.3.5 Security.** Storage areas shall be protected against tampering or trespassers by fencing or other control measures.

**7902.3.6 Protection from vehicles.** Guard posts or other means shall be provided to protect exterior storage tanks from vehicular damage. When guard posts are installed, the posts shall be installed in accordance with Section 8001.11.3.

- J. **7902.3.7 Clearance from combustibles.** The storage area shall be kept free of weeds, debris and combustible materials not necessary to the storage. The area surrounding an exterior storage area shall be kept clear of such materials for a minimum distance of 15 feet (4572 mm).
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- K. **7902.3.4 Spill control and secondary containment.** Storage areas shall be provided with spill control and secondary containment as set forth in Section 7901.8.

**EXCEPTION:** Containers stored on approved containment pallets in accordance with Section 8003.1.3.4.

- L. **7902.6.5.2 Spill containers.** A spill container shall be provided for each fill pipe to collect liquids spilled by overfilling during tank-filling operations. Containers are allowed to be constructed of single-wall construction. Containers shall have a capacity of not less than 5 gallons (18.9 L) and shall be equipped with a drain valve which drains a spill into the primary tank.
- M. **7902.6.5.3 Overfill prevention system.** An overfill prevention system shall be provided for each tank. The system shall either:
1. Have an alarm which provides an audible and visual signal when the quantity of liquid in the tank reaches 90 percent of tank capacity,
  2. Automatically shut off the flow when the quantity of liquid in the tank reaches 95 percent of tank capacity, or
  3. Reduce the flow rate to not more than 15 gallons per minute (0.95 L/s) so that, at the reduced flow rate, the tank will not overfill for 30 minutes, and automatically shut-off flow into the tank so that none of the fittings on the top of the tank are exposed to product due to overfilling.

**7902.1.14.2 Tanks at grade.** Tanks shall rest on the ground or on foundations made of Concrete, masonry, piling or steel. Tank foundations shall be designed to minimize the possibility of uneven settling of the tank and to minimize corrosion in any part of the tank resting on the foundation.

**7902.1.11.4 Vent pipe outlets.** Vent pipe outlets for tanks storing Class I, II, or III-A liquids shall be located such that the vapors are released at a safe point outside of buildings and not less than 12 feet (3658 mm) above the adjacent ground level. Vapors shall be discharged upward or horizontally away from closely adjacent walls to assist in vapor dispersion. Vent outlets shall be located such that flammable vapors will not be trapped by eaves or other obstructions and shall be at least 5 feet (1524 mm) from building openings or property lines of properties that can be built on.

**7902.2.7.2 Fill pipe openings.** For top-loaded tanks, metallic fill pipes shall be designed and installed to minimize the generation of static electricity by terminating the pipe within 6 inches (152.4 mm) of the bottom of the tank and shall be installed to avoid excessive vibration.

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## **7902.2.8 Drainage control and diking.**

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### **EXCEPTIONS:**

1. The chief is authorized to alter or waive these requirements based on a technical report in accordance with Section 103.1.1 which demonstrates that such tank or group of tanks does not constitute a hazard to other tanks, waterways or adjoining property, after consideration of special features such as topographical conditions, nature of occupancy and proximity to buildings on the same or adjacent property, capacity and construction of proposed tanks and character of liquids to be stored, and nature and quantity of private and public fire protection provided.
2. **Drainage control and diking is not required for listed tanks constructed with an integral method of secondary containment.**

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2. The exterior building wall adjacent to the storage area shall have a fire-resistance rating of not less than two hours, having no openings to above grade areas within 10 feet (3048 mm) horizontally of such storage and no openings to below grade areas within 50 feet (15 240 mm) horizontally of such storage.

The quantity of liquids stored adjacent to a building protected in accordance with Item 2 is allowed to exceed 1,100 gallons (4163.5 L), provided that the maximum quantity per pile does not exceed 1,100 gallons (4163.5 L) and each pile is separated by a 10-foot- minimum (3048 mm) clear space along the common wall.

Where the quantity stored exceeds 1,100 gallons (4163.5 L) adjacent to a building complying with Item 1, or the provisions of Item 1 cannot be met, a minimum distance in accordance with the column for distance to property line that can be built on in Table 7902.3-A shall be maintained between buildings and the nearest container or portable tank.

**7902.3.5 Security.** Storage areas shall be protected against tampering or trespassers by fencing or other control measures.

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Mike Dobson, Fire Marshal

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